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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/751,198	12/30/2003	Kyung Hee Koh	PIA31224/DBE/US	2538

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EXAMINER

WILSON, CHRISTIAN D

ART UNIT PAPER NUMBER

2891

DATE MAILED: 10/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/751,198

Applicant(s)

KOH, KYUNG HEE

Examiner

Christian Wilson

Art Unit

2891

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 August 2005.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-6 and 8-11 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1,2,4-6 and 8-11 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 30 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 2, and 11 are rejected under 35 U.S.C. 102(e) as being anticipated by Moon *et al.*

Moon *et al.* (US 2002/0164838) discloses a method for packaging a multi-chip module comprising the steps of connecting a first chip **110b** with wafer bumps **116b** to lower parts of inner leads of TAB tapes **230** with an inner lead **242** and an outer lead **235** with electrical signals communicated between them, connecting a second chip **110a** with wafer bumps **116b** to an upper part of the TAB tapes connected to the first chip [Figure 3a], encapsulating with an underfill material **146** between the TAB tapes and the chips [Figure 3b], and connecting the outer leads of the TAB tape to a patterned circuit **182**.

Regarding claim 2, Moon *et al.* further discloses connecting a third chip [Figure 4b] with wafer bumps **172** to an upper part of the second chip, connecting the outer leads **135** of the TAB tape to the wafer bumps of the third chip, connecting an inner lead **242** of the TAB taps to the other wafer bump of the third chip, connecting a fourth chip [Figure 4b] with wafer bumps to the TAB tapes, and encapsulating with an underfill material **146** between the taps and the third and fourth chips.

Regarding claim 11, Moon *et al.* further discloses accumulating a plurality of chips [Figure 4b].

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 4 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moon *et al.* in view of Isaacson.

Moon *et al.* teaches the limitations of claims 1 and 2 as described above, but does not discuss mounting a radiator to the upper part of the second chip with a conductive adhesive. Isaacson (US 3,766,439) teaches mounting a heat radiator 18 to a second chip with a conductive adhesive [column 5, lines 15-30]. It would have been obvious to one of ordinary skill in the art to use the mounting method of Isaacson in the method of Moon *et al.* since this method provides an improvement in the dissipation of heat from the devices.

5. Claims 5, 6, 9, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moon *et al.* in view of Morrison *et al.*

Moon *et al.* teaches the limitations of claims 1 and 2 as described above including TAB tapes are bonded the wafer bumps on the chips [Figure 1a], but does not discuss the bonding method. Morrison *et al.* (US 2002/0114143) teaches a gang bonding method of mounting chips to a TAB tape [0063]. It would have been obvious to one of ordinary skill in the art to use the

Art Unit: 2891

bonding method of Morrison *et al.* in the method of Moon *et al.* since gang bonding provides a fast and low-cost operation while resulting in high quality, reliable attachments.

Response to Arguments

6. Applicant's arguments filed August 18, 2005 have been fully considered but they are not persuasive.

Applicant argues that Moon *et al.* does not disclose connecting the TAB tapes to a patterned circuit, but to a substrate or another assembly. This argument is not persuasive since Moon *et al.* specifically states connecting one of the TAB tapes to a printed circuit board (PCB) [0032] which is a patterned circuit.

Applicant further argues that the method of Moon *et al.* is more troublesome than the claimed method. The arguments of counsel cannot take the place of evidence in the record. *In re Schulze*, 346 F.2d 600, 602, 145 USPQ 716, 718 (CCPA 1965). Examples of attorney statements which are not evidence and which must be supported by an appropriate affidavit or declaration include statements regarding unexpected results, commercial success, solution of a long-felt need, inoperability of the prior art, invention before the date of the reference, and allegations that the author(s) of the prior art derived the disclosed subject matter from the applicant. Further, arguments directed at the method of forming the interposer are directed to features which not recited in the rejected claims (the method of forming the tape). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

The remaining arguments are directed to the references Isaacson and Morrison *et al.* which are used to reject further dependent claims. These references are not used to reject

Art Unit: 2891

limitations covered by Moon *et al.* in claims 1, 2, and 11. Therefore, the arguments directed at these references are not persuasive.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christian Wilson whose telephone number is (571) 272-1886. The examiner can normally be reached on weekdays, 7:30 AM to 4 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bill Baumeister can be reached on (571) 272-1722. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2891

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'CDW', with a large, stylized loop at the end.

Christian Wilson, Ph.D.
Primary Examiner
Art Unit 2891

CDW